

## 8.1 INTRODUCTION

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This chapter is a summary of the Boating Needs Assessment for the Sacramento-San Joaquin Delta. This multi-phased and multi-layered needs assessment was undertaken to investigate, review, and evaluate the status of, and needs associated with, recreational boating in the Sacramento-San Joaquin Delta.

Although the study is broad in terms of the types of information fielded and evaluated, the focus of this study was limited to water-related recreation and the study is therefore not a comprehensive recreation assessment and/or plan for the Delta region.

This needs assessment includes several outreach components and subsequent layers of analysis to achieve a sufficient level of confidence about the status of recreation and the condition of recreation-serving facilities for the present and future. This summary chapter is intended to put the entire study into an overall conceptual context and help explain the relationship between the different study components. A brief summary of the components of this study is listed as follows:

1. **Chapter 2** presents an overview of the physical and planning context of the Delta Region. (See **Chapter 2, The Delta Setting**.)
2. **Chapter 3** presents an overview of the information learned through the workshop-based outreach effort. (See **Chapter 3, User Outreach – Delta Workshop Summaries**.)
3. **Chapter 4** presents an overview of information gained through the statewide survey effort, conducted in the years 2000 and 2001. (See **Chapter 4, Statewide Survey Summaries and User Assessments**.)
4. **Chapter 5** presents another information-gathering component conducted in the year 2001 that involved focused interviews and facility evaluations of water-related recreation facilities in the Delta. (See **Chapter 5, Facility Replacement, Upgrade, and Repair Needs – Year 2001 to 2020**.)
5. **Chapter 6** presents the quantification of existing and future demands for boating recreation in the Delta. This analysis was in part achieved through the juxtaposition of the State survey-derived user data and the assessment of existing facilities. (See **Chapter 6, Boating Facilities Demand Forecast**.)
6. **Chapter 7** presents an overview of the CALFED Bay-Delta planning context as an important backdrop to existing and future water-based recreation in the Delta. The array of CALFED Bay-Delta Program associated actions, programs, and projects proposed and/or underway are discussed within the perspective of their potential impacts on recreation. (See **Chapter 7, CALFED Bay-Delta Program**.)

## 8.2 THE DELTA SETTING— FINDINGS AND ISSUES

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The key physical and geographic characteristics of the Delta are:

- **The Delta region serves many purposes.** The Delta is a complex system of water channels and land areas. Various strategic and physical planning efforts underway are aimed at ensuring a viable future for the many critical functions that the Delta accommodates.
- **One of the primary recreational boating resources in California, the Delta region provides a unique California boating experience.** The Sacramento-San Joaquin Delta area encompasses approximately 800 miles of winding waterways, with access to and from the San Francisco Bay and upper Sacramento River areas.
- **Recreation is one of the important functions of the Delta.** The Delta attracts numerous visitors throughout the year because it offers a diversity of recreation settings and experiences. Recreation is an integral part of the history and existing character of the Delta region.

- **There is an extensive community of recreation enthusiasts who consider the Delta their special place.** The Delta serves as a popular venue for many types of water-related recreational activities that are supported by a long-standing tradition of local recreation-oriented businesses and services.
- **The Delta is rural in character but within a relatively short driving distance from major population hubs.** Although the Delta is rural in character with a feeling of remoteness, it is situated within a relatively short driving distance from the San Francisco Bay Area and Central Valley communities.
- **The Delta resident population is generally linked with its resources.** The Delta is primarily populated with agricultural and recreation-oriented communities.
- **The Delta landscape is difficult to see and experience as a whole.** Part of the attraction of the Delta, and one of the reasons the Delta remains a lesser-known part of the region, is its peculiar geography. Because of the flat topography and the predominant levee landform that generally defines both land-side and water-side views, land and water vistas tend to remain segregated. The effect of this peculiar topography is that one does not really experience the whole Delta at once, regardless of the mode of travel or the length of time spent there. The effect of this peculiar landscape is that despite its proximity to major populated areas, the resource remains hidden to the majority of nearby residents.

### 8.3 USER OUTREACH – DELTA WORKSHOP SUMMARIES

The outreach workshop activities conducted for this study helped characterize the recreation enthusiast's perspective. The workshop summaries are presented as a supplementary component to the statewide survey information that provides an analysis of the data gathered through two separate statewide-administered surveys. Key findings derived from the workshop-based outreach effort include the following:

#### WATER QUALITY ISSUES

Perceptions of poor water quality in the Delta are commonly shared. These perceptions are, in part, attributable to the basic conditions/processes occurring in the Delta: i.e., peat soils and estuarine conditions. The following is a summary of water-related issues identified in the outreach process:

- Improper disposal of boat wastes
- Reduced water flows from water diversions
- Invasive aquatic plant species
- Obstacles and debris in the water

#### PUBLIC PERCEPTION ISSUES

Issues were raised related to the general public's perceptions of the Delta:

- The general public has a negative impression of the Delta as a recreation area.
- Negative news about the region (i.e., a drowning, boat accident, or other mishap) far outweighed the number of positive stories about the area.
- Perceptions of poor water quality accentuate the Delta's negative image.

#### USER ACTIVITY-RELATED ISSUES

Most user-related issues involved various conflicts between the diversity of boater types in Delta who share the same waterways.

- Many of the channel structures are narrow and, inevitably, there is mixed boating use in these confined areas. This limitation leads to both congestion and the risk of conflicts between disparate user types.
- Ill-informed boat operators and the lack of educational information about proper boating conduct were cited as significant issues.
- Overly restrictive speed limits for many types of boating activities were also cited as an important issue to some users.

- There is perceived a lack of quality destinations and, in general, poor connections between the water-side environment and land-side facilities and recreation destinations.

**FACILITIES, INFRASTRUCTURE, AND SERVICE ISSUES**

Workshop participants identified a variety of issues related to specific infrastructure types. The following is a brief summary of issues identified regarding infrastructure, facilities, and services:

***Restroom Issues***

- There is a scarcity of restrooms throughout the Delta.
- Existing restroom facilities are generally in poor condition.

***Day-Use Facilities***

- There is also a scarcity of day-use type facilities/destinations throughout the Delta, thus limiting the range of activities for Delta users.
- There is unregulated use of (trespassing on) private lands (impromptu day-use activities).
- There are numerous existing public day-use facilities in disrepair in the Delta.

***Beach Facilities***

- Beach access was identified as a high-demand resource in the Delta that is in scarce supply.
- The existing public beach-type facilities are generally in poor condition.
- Beach-type facilities are difficult to create and maintain due to the fluvial processes that occur in the Delta.
- Trespassing on private property is frequently associated with boaters attempting to use shore sites illegally for beach use.

***Buoy Fields***

- There are too few public buoys in the Delta. A minimal number of public buoys are currently available, especially in the more

natural areas where boaters might wish to congregate.

- In general, the placement and management of buoys is not regulated.
- There is reluctance by agencies to take responsibility for maintenance and management of buoys – especially for seasonal installation and removal.

***Non-motorized Boating Access***

- Non-motorized type boating – canoeing, kayaking, and other paddle-driven boats – is currently limited, in part by the scarcity of access sites and facilities.
- There is a lack of infrastructure for non-motorized boating, including parking, signage, restrooms, and stopping points.

***Launch Ramps***

- There are an insufficient number of launch facilities throughout the Delta.
- Some boaters indicated that the launch facilities are not located in preferred locations.

***Pump-out, Fuel, and Bilge Facilities***

- Fuel service prices are cited as being too high.
- There are an insufficient number of facilities, or the facilities that are in the Delta are sited in wrong locations for the participants.

**OPERATIONS AND MAINTENANCE ISSUES**

There were a number of operations and maintenance-related issues raised and they are summarized as follows:

***Pump-out, Fuel, and Bilge Facilities***

- From the operator’s perspective, fuel facilities are generally too expensive to operate.
- Pump-out facilities are typically expensive for private operators to run.

***Public Facility Maintenance Issues***

- Existing restrooms in the Delta are typically poorly maintained.
- Boat-accessed facilities are especially difficult to maintain.
- There is insufficient funding available for public facility maintenance, especially at the local government level.

***Private Facilities***

- There are also limited funding sources available to the private sector for maintenance and infrastructure-related improvements.
- A key issue mentioned in the outreach process was the absence of a recreation plan to help with the prioritization of addressing deferred maintenance.

***Law Enforcement***

- A general observation from workshop participants was that law enforcement agencies are understaffed in the Delta region.
- The problem of lack of coordination between jurisdictions, leading to unequal enforcement, was mentioned at several of the user-group workshops.

***Aquatic Vegetation Removal***

- There are inadequate programs and insufficient staffing in place to fully carry out the needed exotic vegetation removal.
- There are also environmental constraints related to removal or control of exotic vegetation.

***Debris Removal***

- The key issue pertaining to debris removal is the lack of a responsible agency for such work.
- The lack of suitable equipment for removing or managing various types of debris, especially the larger objects, was also cited.

***Dredging***

- Similarly, the lack of a responsible agency for dredging and silt removal in the Delta was cited as an important issue.
- There is also a lack of funding support for this important maintenance activity in the Delta.
- Finally, dredging permits were said to be difficult to obtain, with a lengthy and restrictive permitting process involved.

***Watergate Operations***

- The operations of watergate structures are not responsive to boater access needs or schedules.
- The impact of route barriers as a result of watergate type closures is an important concern of Delta boaters.

**8.4 STATE SURVEY-RELATED FINDINGS: TRENDS, ISSUES, AND OPPORTUNITIES**

Utilizing two statewide-distributed surveys, this portion of the study identified and evaluated recreational boat owner preferences and facility needs. The following is a summary of the key findings developed from the statewide boat owner surveys:

**OWNER PROFILE**

- Delta boat owners are predominantly middle-aged, white males from households with moderately high levels of education. Large-boat owners are more likely to be “empty-nesters” (having no children at home) compared to the more family-oriented small-boat owner.
- Documented Vessel owners are slightly older on average than the other boat owner categories, while windsurfers and PWC owners constitute the youngest age group.
- Boat owners who use the Delta are significantly less ethnically diverse than an overall cross section of the California population.

- Boat owners who have used the Delta within the past two years are predominantly from nearby Northern California counties, with the largest proportion coming from Sacramento, Alameda, Contra Costa, San Joaquin, Santa Clara, and Solano counties.
- Orange, Los Angeles, San Diego, and San Bernardino counties in metropolitan Southern California are the primary counties of origin for boat owners who have either not boated in the Delta within the past two years or never boated in the Delta.

### BOATING CHARACTERISTICS

- Of those boat owners who have recreated in Delta waters, 65 percent have done so within the past two years. Among boat owners who have not visited within the past two years, distance is mentioned as a primary reason, followed by a preference for other boating locations.
- Among those who have never boated in the Delta, the primary reason is distance to the Delta (64%), with a significant portion also indicating a lack of information (34%) about a boating destination.
- Large-boat owners are most likely to own gasoline-powered (diesel and gasoline) cabin cruisers, while small-boat owners use runabouts (42%) or specialized bass-fishing boats (18%), with a noteworthy minority using PWCs (17%).
- As might be expected, the majority of small-boat owners store their boats at home on a trailer or dry storage rack (83%), while large-boat owners are most likely to keep their vessels on the water at a public or private marina (76%).
- Boat owners tend to be high-frequency visitors to the Delta with the majority of their recreational boating occurring in the area – in short, a very loyal boating population.
- On a typical day, boat owners might travel a round-trip average distance of 20 to 25 boating

miles, with small-boat owners traveling at the higher range of this average.

- Somewhat more than one-third (38%) of small-boat owners take overnight trips, while about three-quarters (75%) of large-boat owners do so.
- Among boat owners, seasonal use peaks during the summer, with a noteworthy percentage of boat owners often extending use into the fall or spring seasons. Off-season use is somewhat more pronounced for large-boat owners. The fall is the most cited off-season use, with the least boating activity identified in the winter season.
- Complementing county of origin data, the majority of surveyed boat owners said that they travel (by vehicle) from within a 75-mile radius to get to the Delta (40 mile mean). However, a noteworthy minority does travel from beyond 100 miles to recreate in Delta waters (21%).
- More than 50 percent of those who own large boats prefer a shore or transient slip as a means of access to the shore, though currently nearly half use a dinghy from a moored position.
- Personal experience or friends and relatives are the most mentioned sources of information about the Delta, with owners of small boats most likely to use these sources. Large-boat owners are more likely to get their information from a marina or general information publication.
- Ranked in order of preference, cruising, swimming, sightseeing, fishing, and visiting restaurants are the most popular recreational activities among boat owners.

### *Survey Identified Facility Needs*

- In response to specific site and associated facility-need questions, a majority of respondents consider existing facilities “fine as is” in their current condition. Large-boat owners are somewhat more satisfied with existing facilities than small-boat owners are.

Also, add/expand responses are more common than repair/replace responses.

- Among those who indicate specific facility needs, perceptions vary considerably by boat size category. Large-boat owners are primarily interested in bilge water pump-outs, sewage pump-outs, long-term tie-ups, and oil disposal. Small-boat owners want more or improved restrooms and showers, campgrounds, day-use and picnic areas, parking, carry-down walkways, and launch ramps. Boat owners from both groups are in agreement about the need for more or improved short-term tie-ups.
- Small-boat owners primarily focused their site references on the central zones of the Delta – generally in the West Delta vicinity. While large-boat owners also mention the West Zone more than other Delta zones, they more typically reference sites in the Central and East Zones. Compared to large-boat owners’ responses, small-boat owners’ responses to specific site-related needs often cited “more or better facilities.”

**OWNER PERCEPTIONS**

- Factors identified as the greatest influences for **not** boating in the Delta are fairly consistent with regard to boat size. Both large- and small-boat owners cited waterway boat traffic congestion and poor water quality as significant impediments to using Delta waters. However, large-boat owners were more likely to mention shallow water depths as an important consideration as to why they would not visit the Delta.
- Both large- and small-boat owners agreed that the most important attributes for quality recreational boating destinations include good regulation and safety, congestion-free waterways, few boating conflicts, and good water quality. Also listed as important were good fishing, quality natural resources, and [adequate] services and supplies.
- The quality of the water was identified as the single most important aspect for the boating experience. On the other hand, it is also perceived as the Delta’s most urgent problem,

followed by waterway congestion, regulation and safety, and boater conflicts.

- The most urgent need pertaining to recreational boating is improved water quality. Short-term tie-ups and slips were the most frequently stated need by the large-boat category while more and better restrooms were the most frequently mentioned amenity improvement by the small-boat category.

**8.5 FACILITY EVALUATION FINDINGS: TRENDS, ISSUES, AND OPPORTUNITIES**

Analysis in this chapter was based on field investigations and survey information obtained from Delta boating facility providers. The following is a summary of findings gathered thorough this survey effort and subsequent data analysis:

- Survey data indicate that the majority of Delta marina facilities have been in operation for 21 years or more.
- Of the 65 marinas surveyed, 44 are older than 40 years and ten are between 20 and 40 years old.
- Marina owners identified their facility replacement, upgrade, and repair needs in the following order of priority: dredging, docks/slips, dry boat storage, launch ramp lanes, parking, and transient docks.
- 22 marina owners reported that their facilities currently needed dredging.

In addition to soliciting information regarding repair, upgrade, and replacement needs, marina owners were also asked to describe their “Dream Projects” for the future. Their responses included the following items:

- Add or rebuild docks and slips, dredging, and add sanitation pump stations.
- Add or improve dry boat storage, add launch ramp, pave parking and roads, expand RV facilities, and add more restrooms.
- One marina owner cited a hotel and conference center as a “Dream Project.”

However, the majority of the people interviewed were more focused on meeting short-term facility maintenance and improvement needs.

Quantifications of boating-related facilities in the Delta are as follows:

- Of the total 95 marinas quantified in this survey, there are an estimated 11,674 boat slips.
- In general, the current upgrading trend for boat slips involves the conversion of smaller slips to slips that can accommodate large boats over 26 feet in length and for boats that can be berthed in the Delta year-round.
- As might be anticipated with the age of many of the surveyed marinas in the Delta, there was significant evidence of deferred maintenance observed during the site surveys.
- The cost to repair or replace identified needed improvements at the 95 marinas over the next two decades was estimated to range from \$107 million to \$159 million.

## **8.6 BOATING FACILITIES DEMAND FINDINGS: TRENDS, ISSUES, AND OPPORTUNITIES**

Forecasts were developed through a series of analyses, starting with developing estimates for the year 2000 annual and peak-day visitation. Present facility needs and deficiencies were outlined in **Chapter 6** and analyzed, using a combination of trends and key variables, to generate estimates of future visitation for the time horizons of 2005, 2010, 2015, and 2020. Standards were then developed and applied that translated the peak-day demand figures into facility need estimates both for present use and for the future targeted horizons. Marina slip, dry boat storage, fuel stations, and bilge pump-out station requirements for future years were developed separately using a different methodology. For these requirements, the year 2001 inventory of facilities was established as the baseline and then the future demand was projected as based upon population growth. Order of magnitude costs for facility deficits were then estimated at the specified time horizons.

Two analytical models were used in this study to forecast future boating activity in the Delta, a Demand Model and an Econometric Model. These projections included the determination of annual boating visitor days and peak-days, leading to an estimate for facility needs.

### **SUMMARY OF FIVE PRIMARY INDICATOR TRENDS**

In order to arrive at an acceptable level of confidence regarding projected demands for recreation in the Delta, this study looked at multiple trends as potential determinants of future boating activity in the region. The objective was to look for patterns among the different trend dynamics and then crosscheck between them to weed out possible anomalies. Subsequently, five primary variables were identified through this study that are viewed as potentially most significant in terms of influencing future boating. These variables involve trends or changes in:

- Population growth and demographic characteristics
- Total resources-related outdoor recreation use
- Boating registration and ownership patterns
- Quality of the Delta resources and facilities
- Economic conditions

Each of these trends was evaluated and the primary determinants were identified.

#### ***Trend 1 - Population Growth and Demographic Characteristics***

Key population growth-related trends noted in statewide census data have been applied to the population values for the Delta's Primary Market Area (PMA). This area includes 13 counties within and contiguous to the Delta. The following are PMA characteristics of special note.

- Population within the State as a whole increased by 1.8 percent annually over the past 20 years, while population within the PMA

increased by 1.6 percent annually during the same period.

- 75 percent of the boat owners surveyed reside within 75 miles of the Delta and within the PMA.
- Approximately 87 percent of the current boat owners utilizing the Delta are between the ages of 40 and 75. Also, 95 percent are Caucasian. This population segment has been identified as the Primary Boater Population (PBP).
- The PBP segment within the PMA is projected to grow from 1.06 million to 1.20 million between 2000 and 2010 and then to decline back to 1.14 million by 2020. This decline is assumed to be a result of the peak population bulge referred to as the “baby boomers” passing into and then through the primary boater population age group, which is assumed to remain constant.

***Trend 2 - Total Resources-Related Outdoor Recreation Use***

The California Department of Parks and Recreation (DPR) conducts outdoor recreation preference surveys approximately every five years. Surveys from 1992 to 2001 were reviewed in this research in regard to the relative standing of boating- and water-related recreation preferences.

- Total resources-related outdoor recreation use in California increased at a rate nearly identical to California’s growth rate in the past decade.
- Some activities are increasing while others are declining.
- The most rapidly growing recreation preferences include active pursuits such as PWC riding and nature study outings.
- Activities that are declining in use include hunting, fishing, and sailing.
- The DPR surveys suggest that boating activities in California have increased, but they have not kept pace with population growth in the past decade.

***Trend 3 - Boating Registration and Ownership Patterns***

This trend tracked boating ownership information derived from the combined Department of Motor Vehicle and United States Coast Guard registration information for boats registered in California.

Boat ownership growth, 1980–2001

Small-boat growth	2.61 %
Large-boat growth	2.72 %
Total boat growth	2.62 %
California population growth	1.8 %

Boat ownership growth 1990–2001

Small-boat growth	1.46 %
Large-boat growth	2.88 %
Total boat growth	1.56 %
California population growth	1.3 %

Within the total aggregate of registered boats in California, PWCs accounted for 77 percent of the increase between 1990 and 2000.

***Trend 4 - The Quality of the Delta Resource and Facilities***

This trend takes into consideration the status of the Delta resource itself. The Delta resource has been found to be the most difficult variable to quantify in terms of its influence on existing and future boating use in the region. This study took into consideration the assortment of actions proposed through the CALFED Bay-Delta program and then translated those actions into two primary categories: actions adding value to the quality of the Delta boating experience and actions that might further limit or diminish that experience.

**Actions that add value to the Delta boating experience**

- Environmental restoration and the improvement of water quality are two CALFED Bay-Delta objectives that have the potential to add value to the experience of future boaters if the proposed improvements are implemented as planned.
- Anticipated future summer draw-downs of reservoirs in Northern California to meet increasing demands for water have the

potential to increase the popularity of the Delta as a boating destination because the water level remains constant.

**Actions that could diminish the boating experience**

- Closure and restriction of boating use of waterways and the disruption of established boat traffic routes have the potential to diminish the quality of the boating experience in the Delta, which could result in less boating activity.

***Trend 5 - Economic Conditions***

Trends in economic conditions within the PMA have been determined to be a somewhat neutral variable, as the leading indicators tend to balance or cancel out contrasting influences. The influence that can be surmised is perhaps best reflected in the boat registration growth compared against growth in the general population.

**BOATING FACILITIES DEMAND FORECAST KEY FINDINGS**

***Delta Boating Visitation Estimates***

- There were an estimated 6.4 million boating-related visitor days in the year 2000.
- There were an estimated 2.13 million boat trips in the year 2000 to accommodate those 6.4 million visitor days.
- Of those 2.13 million boat trips, an estimated 1.98 million were of the small-boat category.
- There were an estimated 150,000 large-boat trips to the Delta in the year 2000.

***Annual Peak-Day Boats***

The peak-day of use during the year was determined to be a non-holiday-weekend Saturday in the month of July. The breakdown is as follows:

- 8,386 total boats
- 7,796 small boats

- 590 large boats

A comparison was made between six growth models built around the five trend indicators described above. An econometric model developed independently was included in this analysis. This comparison resulted in the following range of annual attendance projections:

- A range of 5.8 to 9.5 million annual visitor days, with 6.4 million annual visitor days being the most probable estimate of attendance for the baseline year of 2000
- Boating annual visitation to increase at the rate of 0.79 percent per year from 2000 to 2010 and at the rate of 0.46 percent per year from 2010 to 2020
- A slowing down of the annual growth rate in the later period as a result of the “baby boom” bulge moving through and out of the active boating years to begin after the year 2010

***Facility Deficiencies***

- An order of magnitude facility needs estimate was developed for the specified time horizons of 2001, 2005, 2010, 2015, and 2020.
- This study reveals deficiencies for most facility categories for each of the time horizons.
- The findings from this needs analysis were substantiated by survey and interview information gathered from users and marina operators.

The following boating-associated facilities are anticipated to be deficient in supply during the 2001-2020 time period. The deficit shown is the accumulative deficit that will occur by 2020 if there are no additions to the current supply.

**Table 8-1  
Estimated Facility Deficiencies**

Facility	2001-2020 Deficit
Boat Slips (Covered)	2,051
Boat Slips (Uncovered)	880
Boat Launch Lanes	92
Vehicle with Boat-Trailer Parking Spaces	1,968
Transient Dock Tie-Ups	272
Restroom Fixtures	187
Day-Use/Picnic Sites	173
Fuel Stations	14
Dry Boat Storage Facilities	466

### 8.7 CALFED SUMMARY

CALFED-related actions and suggested implications to boating in terms of potential impacts and opportunities were outlined in **Chapter 7**. This study presents the finding that there is the potential for both improvement and adverse effects upon recreation resulting from the specific outlined actions. The improved quality of the resource is the primary factor that implicitly translates to improved recreational boating opportunities in the Delta. This is especially true with the CALFED actions that result in improvements to water quality, since water quality constitutes the greatest nexus between survey and workshop desires and needs matched with CALFED objectives. Another important observation is a shift in the types of recreation opportunities in the Delta if these actions are fully implemented. A net decrease in the total amount waterways usable by powerboats may be compensated by a net increase in the total amount of waterways that will be accessible by non-motorized craft such as canoes and kayaks. Specific recreation-impact studies are recommended for each of the proposed CALFED actions in order to accurately quantify both the short- and long-term impacts with respect to recreation.

### 8.8 SYNTHESIS OF FINDINGS

This final section provides a summary comparison of the facility need priorities as expressed by the three principal survey components of this study:

- The California statewide boat owners survey(s)
- The Delta marina owner/managers inventory/survey
- The outreach workshop participants (based on their categorical responses)

A comparison and analysis is made here of the preferences expressed by these three primary groups. The preferences are then compared with the array of potential boating opportunities that can be associated with the CALFED Bay-Delta Preferred Program Alternatives as shown in **Table 8-2**. Lastly, this section summarizes the estimated cost of all boating-related facility replacement, upgrade, and repair needs as well as the estimated cost of new facilities that will be required to keep up with the projected future demand through the next two decades.

#### A COMPARISON OF BOAT OWNER AND MARINA OWNER/OPERATORS SURVEY RESPONSES REGARDING FACILITY PRIORITIES

Both the boat owners and the facility operators identified the five following facility-need categories as priorities:

- Better facilities in general
- Boat slips
- Transient docks
- Parking
- Launch ramps

Reinforcing these facility needs, workshop participants also identified *add more facilities in general*, and *add more launch ramps* as priorities. Comments from workshop participants also revealed that just having the facilities in the Delta is not necessarily sufficient in itself. According to some participants, launch ramps might be

available in the Delta but were not always sited in preferable places.

Seven facility-need categories were identified as priorities by boat owners but not by marina owners/operators. They include the addition of:

1. Sewage facilities (large-boat owners)
2. Bilge pump-out facilities (large-boat owners)
3. Oil collection facilities (large-boat owners)
4. Restrooms and showers (small-boat owners)
5. Campsites (small-boat owners)
6. Day-use sites (small-boat owners)
7. Carry-down walkways (small-boat owners)

Among these facility-need categories, workshop participants also identified sewage/bilge pump-out facilities, and day-use sites as priorities.

Three facility-need categories were identified as priorities by the marina owner/operator group but not by the boat owner group. These categories include:

- Improving existing facilities
- Dredging: channels and marina sites

- Additional dry boat storage

Among these facility-need categories, workshop participants also identified *improving existing facilities*, and *dredging channels and marina sites* as important priorities.

Three facility need categories were identified by the workshop participants but not by the boat owners or marina owner/operators group. These priorities include the need for more:

- Public buoys enabling overnight tie-ups
- Car-top boat access points for non-motorized boats, i.e. kayaks, canoes
- Beaches with day-use facilities and water access

Fuel dock facilities were not identified by any of the three primary groups as a priority need. Although survey questions probed the need for gasoline and diesel fuel facilities, responses were relatively low for these types of facilities. Consequently, it is assumed that there are currently adequate numbers of fuel dock facilities to meet current needs.

**Table 8-2  
CALFED Bay-Delta Preferred Alternative Projects**

<b>Project</b>	<b>Potential Recreation Benefits</b>	<b>Potential Associated Recreation Facilities</b>
1. The Flooding of Holland and Bouldin Islands	Increased fishing opportunities  Increased water surface area for boating activities	Potential for shoreline access features and parking facilities  Potential for boat launch ramps and marina facilities
2. Potential Screened Diversion and Conveyance Channel at Hood	No benefits to recreation identified at this time	
3. Delta Cross Channel Re-Operation and Diversion Facility on the Sacramento River	No benefits to recreation identified at this time	
4. Georgiana Slough Restoration	Increased or improved fishing opportunities  Improved wildlife viewing and nature study opportunities	Potential for shoreline access features and parking facilities  Potential for car top non-motorized boat access points with parking and day-use facilities
5. North and South Fork of the Mokelumne River Possible Setback Levees or Channel Modifications	Improved wildlife viewing and nature study opportunities	Potential for car top non-motorized boat access points with parking, and day-use facilities in conjunction with setback levees
6. Habitat Restoration and Flood Control at McCormack-Williamson Tract	Improved wildlife viewing and nature study opportunities	Potential for car top non-motorized boat access points with parking and day-use facilities Potential for nature-related nature trails (land and water) for pedestrians, canoers, and kayakers
7. Old River Channel Enlargement	Opportunity for design to accommodate public access	Potential for development of vehicle access and boat-in day-use areas adjacent to river
8. South Delta Channel Dredging, Screening, and Consolidation of Agricultural Intakes	Boating navigation improved by dredging	Potential to assist marina owners/operators with dredging needs
9. South Delta Levee Setbacks and Improvements	Improved wildlife viewing and nature study opportunities	Potential for car-top non-motorized boat access points with parking and day-use facilities in conjunction with setback levees
10. South Delta Operable Flow Control Barriers	Opportunity to include boating facility needs in design	Potential for development of boating facilities in conjunction with flow control barriers that provide for movement of boats from one side of barriers to the other via boat ramps, lifts, etc. and parking, restrooms.

Project	Potential Recreation Benefits	Potential Associated Recreation Facilities
11. Clifton Court Forebay Pumping Station and Fish Screen	Reduced losses to select sports fish species Delta-wide	
12. Proposed Delta-wide Ecosystem Restoration Program	Enhanced terrestrial and aquatic habitat in selected sloughs and waterways	Potential for expansion of non-motorized boating opportunities Potential for enhanced wildlife observation and nature study opportunities Potential for improved fishing opportunities

**FACILITY IMPLICATION RESULTING FROM CALFED**

As CALFED Bay-Delta projects are selected for implementation, it is recommended that recreational planning occur as a concurrent and integrated process. By incorporating recreational considerations, the impact on existing recreation uses as well as potential opportunities for expanded recreation can be effectively identified, mitigated, and incorporated into the larger planning process.

Some boating circulation patterns and use patterns will undoubtedly be disturbed by future CALFED Bay-Delta projects. When this occurs, it will be important to seek alternative travel routes and recreational activity sites. An important factor in selecting these future routes and sites for relocated boating-related facilities, or the addition of new facilities, will be the issues, concerns, and performance identified through the various outreach components of this program.

No cost estimates have been developed for the potential CALFED Bay-Delta Preferred Alternative Projects opportunities discussed above. It is assumed that the costs for these potential recreation improvements would be borne by, and integrated with, the CALFED Bay-Delta Preferred Alternative Program as mitigation. This mitigation would address both the loss of existing recreation access and uses as well as the loss of potential recreation opportunities that are diminished as a result of specific CALFED Bay-Delta projects or actions.

**DELTA FACILITY ESTIMATED COSTS, 2000—2020**

Delta facility costs discussed in this section fall into two categories. The first is facility replacement, upgrade, and repair costs, and the second is capital costs to make new improvements to keep up with future demand until the threshold year of 2020. The basis of these costs is derived from analyses presented in **Chapter 5** and **Chapter 6**, and as shown in **Table 5-9** and **Table 6-13**. The categories of improvements correspond with those identified above in the comparison of survey responses and workshop participant responses.

**DELTA EXISTING FACILITIES REPLACEMENT, UPGRADE, AND REPAIR ESTIMATED COSTS, 2001—2020, BY DELTA ZONES**

Estimated costs within the defined time horizons have been broken down according to the Delta zones. Driven by a combination of the estimated level of replacement, upgrade, and repair needs by zone, order of magnitude costs have been developed that match the defined time horizons. Total costs for all facility replacement, upgrade, and repairs is estimated to be \$127 million for the period 2001 to 2020, as shown in **Table 8-3**. **Table 8-4** expresses the same costs as distributed by Delta zone.

**DELTA ESTIMATED DEMAND FOR NEW FACILITIES, 2001 - 2020, BY DELTA ZONES**

The demand estimates for new boating-related facilities in the Delta are based on a combination of factors, including boat registration trends, population growth trends, and other tangible

influences as described in detail in **Chapter 6**. The total investment required to meet demand for new facilities for the period 2001 to 2020 is approximately \$84 million, as shown in **Table 8-5**.

The total cost for both replacement, upgrade, and repair to the current facility inventory and the investment required to keep up with demand is approximately \$211 million, as shown in **Table 8-6**.

**Table 8-3**  
**Marina Replacement, Upgrade, and Repair by Year**  
*Shown in (000s)*

Approach	Total Number of Marinas	2001	2005	2010	2015	2020	Total
<b>Approach 1:</b> Replacement of Facilities	14	\$21,008	\$24,554	\$15,096	\$6,866	\$17,211	\$84,735
<b>Approach 2:</b> Upgrade of Facilities	29	\$6,533	\$7,635	\$4,694	\$2,135	\$5,352	\$26,349
<b>Approach 3:</b> Repair of Facilities	47	\$3,935	\$4,599	\$2,827	\$1,286	\$3,224	\$15,871
<b>Total</b>	<b>90</b>	<b>\$31,475</b>	<b>\$36,788</b>	<b>\$22,617</b>	<b>\$10,288</b>	<b>\$25,787</b>	<b>\$126,955</b>

**Table 8-4**  
**Marina Replacement, Upgrade, and Repair by Delta Zone**  
*Shown in (000s)*

Approach	Total Number Of Marinas	North Delta	NW Delta	Central Delta	West Delta	East Delta	South Delta	Total
<b>Approach 1:</b> Replacement of Facilities	14	\$6,882	\$734	\$9,347	\$46,674	\$16,199	\$4,900	<b>\$84,735</b>
<b>Approach 2:</b> Upgrade of Facilities	29	\$2,140	\$228	\$2,906	\$14,514	\$5,037	\$1,524	<b>\$26,349</b>
<b>Approach 3:</b> Repair of Facilities	47	\$1,289	\$137	\$1,751	\$8,742	\$3,034	\$918	<b>\$15,871</b>
<b>Total</b>	<b>90</b>	<b>\$8,957</b>	<b>\$1,099</b>	<b>\$14,004</b>	<b>\$69,930</b>	<b>\$24,270</b>	<b>\$7,341</b>	<b>\$126,955</b>

**Table 8-5**  
**Delta Estimated Cost Demand for New Facilities 2001 - 2020 by Delta Zone**  
*Shown in (000s)*

Year	North Delta	Northwest Delta	Central Delta	West Delta	East Delta	South Delta	Total
2001	\$1,331	\$525	\$1,490	\$4,044	\$1,336	\$1,017	\$9,743
2005	\$2,938	\$1,330	\$3,504	\$9,639	\$3,064	\$2,430	\$22,904
2010	\$3,064	\$1,363	\$3,576	\$10,747	\$3,140	\$2,472	\$23,362
2015	\$1,392	\$821	\$2,313	\$8,894	\$2,159	\$1,745	\$15,587
2020	\$1,917	\$647	\$1,930	\$5,165	\$1,670	\$1,257	\$12,307
<b>Total</b>	<b>\$11,049</b>	<b>\$4,785</b>	<b>\$12,844</b>	<b>\$35,058</b>	<b>\$11,303</b>	<b>\$8,864</b>	<b>\$83,903</b>

**Table 8-6**  
**2001 through 2020 Estimated Cost for Delta Capital Needs**  
*Shown in (000s)*

Category	Estimated Cost
Facility Replacement, Upgrade, and Repairs	\$126,955
Facility Demand to Keep Up With Growth	\$83,903
<b>Total Estimated Cost</b>	<b>\$210,858</b>

**RECOMMENDED FUNDING SOURCES FOR DELTA IMPROVEMENT NEEDS FROM 2001 THROUGH 2020**

The following is a preliminary list of suggested funding sources for the implementation of the Delta Facility Needs Capital Improvement Program:

- Grant, loan, and capital outlay programs of the California Department of Boating and Waterways
- State Grant Bond Funds available to state and local agencies
- Funds administered by CALFED Bay-Delta

- Fish and wildlife grants and loans
- Foundation and conservancy grants
- Private loans
- Private capital

**SUGGESTED FUTURE ACTIONS**

It is intended that this study will have many uses for the various decision makers who are involved with water-based recreation in the Delta. One important intended function of this study is to provide a key foundation component for a future comprehensive Recreation Master Plan. This information will greatly assist in master planning the site locations, with possible relocation of specific recreation facilities based on population demands as well as relocation of facilities resulting from actions that are a part of the CALFED Bay-Delta Program. Finally, the data and maps of the Delta and Delta zones associated with this study are compatible with former studies undertaken by California Department of Parks and Recreation and the Delta Protection Commission so the information gained can be aggregated as needed.